

Proceedings of the Iowa Academy of Science

Volume 62 | Annual Issue

Article 28

1955

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Recommended Citation

Kercheval, James W. (1955) "Science Courses Offered in the Parochial High Schools of Iowa," *Proceedings of the Iowa Academy of Science*: Vol. 62: No. 1 , Article 28.
Available at: <https://scholarworks.uni.edu/pias/vol62/iss1/28>

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Science Courses Offered in the Parochial High Schools of Iowa

By JAMES W. KERCHEVAL

Two previous reports to the Academy by the author have dealt with science teaching and science courses offered in the public high schools of Iowa, the second report dealing only with chemistry offerings.^{1, 2} Neither of these investigations touches upon the situation in Iowa's parochial schools. To complete the study such an investigation was made in the spring of 1955 and is herein reported.

There are 118 parochial high schools in Iowa. This does not include the junior high schools. One of the 118 schools has but 11 grades. Their distribution about the state is shown in Fig. 1.

The enrollments in the parochial high schools are compared with those of the public high schools in Table 1. The data for the latter are for the academic year 1952-3.² The grouping in tabulating the enrollments for those years was 1-24, 25-49, 50-74,

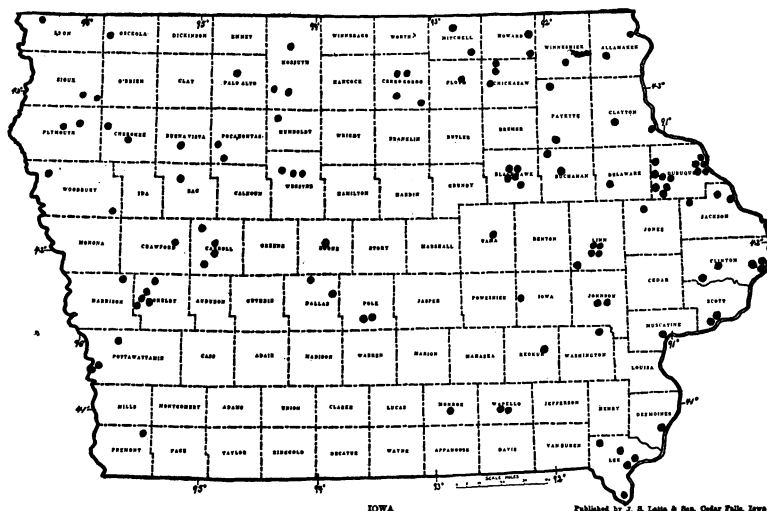


Figure 1. Location of parochial high schools in Iowa.

¹Kercheval, J. W.; A Report on a Survey of Science Instruction in the High Schools of Iowa. Proceedings of the Iowa Academy of Science, 60: 62-73, 1953.

²Kercheval, J. W.; Public High Schools Offering Chemistry in Iowa, Proceedings of the Iowa Academy of Science, 61:260-4, 1954.

etc. in comparison with 1-25, 26-50, 51-75 in this report. However this lack of exact agreement on the grouping should have little effect on the comparison of the pattern of enrollments in the two types of schools.

In general, the enrollment in both groups of schools follows much the same pattern. About 50% of the total number of schools in either group have an enrollment of 75 or fewer students. That is the present day situation which makes provision for good science instruction very difficult.

Table 1
Enrollments in the Public and Parochial High Schools of Iowa

High School Enrollment	Total of All Iowa High Schools (849) ²		Total of Iowa Parochial High Schools (118)	
	Number	%	Number	%
1-25	29	3.4	8	6.8
26-50	189	22.2	24	20.4
51-75	198	23.4	31	26.2
76-100	139	16.4	18	15.3
101-150	117	13.8	17	14.4
151-200	52	6.1	6	5.1
201-300	39	4.6	6	5.1
301-400	35	4.1	3	2.5
401 or more	51	6.0	5	4.2
	849	100.0	118	100.0

A study of the courses offered in the parochial high schools showed the following:

Table 2
Science Offerings in the Parochial High Schools

Science	No. of replies	No. offering	%	No. not offering	%
General Science	107	81	76	26	24
Biology	107	88	82	19	18
Physics	106	79	75	27	25
Chemistry	109	38*	35	71	65

*Three additional parochial high schools send their students who wish to study chemistry to the public high schools in their community.

A number of schools offering science courses offer them on alternate years instead of each year.

Table 3
Number of Schools Offering the Sciences
Every Year and on Alternate Years

Science	Total Number Offering	Offering Each Year		Offering on Alternate Years	
		Number	%	Number	%
General Science	81	55	68	26	32
Biology	88	65	74	23	26
Physics	79	43	54	36	46
Chemistry	38	28	74	10	26

Often the question is raised as to whether it is the small or the large school which is offering or not offering certain sciences. Table 4 shows data to help answer this.

Table 4
Science Offerings in Parochial High Schools by School Enrollment

Enrollment	Percentage Distri- bution of all Parochial H. S. by enrollment (118)	Percentage Distribution by Enrollment of Schools Offering Each Science			
		Gen. Sci.	Biology	Physics	Chemistry
1-25	6.8	8.6	5.7	5.1	7.9
26-50	20.4	24.7	18.4	17.7	10.5
51-75	26.2	24.7	26.2	25.4	18.4
76-100	15.3	12.4	20.4	16.5	18.4
101-150	14.4	16.1	13.7	17.7	21.0
151-200	5.1	2.5	3.4	3.8	5.3
201-300	5.1	4.9	5.7	6.3	5.3
301-400	2.5	1.2	3.4	3.8	5.3
401 or more	4.2	4.9	3.4	3.8	7.9
	100.0	100.0	99.9	100.1	100.0

Summarizing the above we conclude that while only 76% of the schools offer general science, it is offered in about equal proportions in each sized school, the offering being a little greater in the schools of 1 to 50 students. Biology which is offered in 82% of the schools, is distributed in about equal proportions in each size group. Physics offered in 75% of the schools is offered less frequently in the small schools. The same pattern is very noticeable in chemistry.

Table 5 compares the sizes of parochial high schools offering chemistry with those of public high schools.

Table 5
Enrollments in High Schools Offering Chemistry

Enrollment	Public High Schools Offering Chemistry (335) ^{2, 3}		Parochial High Schools Offering Chemistry (38)	
	Number	%	Number	%
1-25	0	0.	3	7.9
26-50	24	7.2	4	10.5
51-75	38	11.4	7	18.4
76-100	55	16.5	7	18.4
101-150	61	18.3	8	21.0
151-200	36	10.8	2	5.3
201-300	39	11.7	2	5.3
301-400	32	9.6	2	5.3
401 or more	49	14.6	3	7.9
	334	100.1	38	100.0

The proportion of high schools in each group which offer chemistry is about the same: public high schools 39.4%, parochial high schools 35%. If we add the three parochial high schools which send their chemistry students to public high schools the percentage becomes 37.6. However there is a difference in distribution in the different sized schools. The parochial schools offer chemistry in more of the smaller schools and in fewer of the larger ones.

Thirty four of the 38 chemistry teachers of the parochial schools indicated the degrees they held. Thirteen or 38% had masters, 18 or 53% had bachelors only, and 3 or 8% had work toward a masters degree. Of the 13 with a masters degree, 2 had majors and 3 had minors in chemistry. Three others had majors and 6 had minors in related sciences. Thirteen of the bachelors degrees were in some field of science and 13 had corresponding minors.

Individual laboratory work in chemistry predominated in 26 of the 35 schools reporting. Only 6 indicated that they used class demonstrations instead of laboratory work. Three reported the use of both types of instruction.

³Enrollment size of high school based upon the Iowa Educational Directory for 1953-4.

The text most commonly used was Dull and Brooks: Modern Chemistry. It was the choice of 21 schools.

Table 6 lists the schools offering chemistry each year or on alternate years.

Table 6
Parochial Schools of Iowa Offering Chemistry Each Year
or on Alternate Years

Bellevue, St. Joseph	Guttenburg, St. Mary
Breda, St. Bernard	Harper, St. Elizabeth
Carroll, Kuemper	Houghton, St. John
Cedar Rapids, Immaculate Conception	Keokuk, St. Peter
Cedar Rapids, Mt. Mercy	Lansing, Immaculate Conception
Cherokee, Immaculate Conception	LeMars, Gehlen
Clinton, Our Lady of Angels Academy	Mason City, Holy Family
Council Bluffs, Mercy Preparatory H. S.	Muscatine, Catholic H. S.
Cresco, Notre Dame	New Haven, St. Mary
Davenport, Immaculate Conception	New Vienna, St. Boniface
Davenport, St. Ambrose Academy	Oelwein, Sacred Heart
Des Moines, Dowling	Ottumwa, Ottumwa Heights Academy
Des Moines, St. Joseph Academy	Ottumwa, Walsh
Dubuque, Immaculate Conception	Pocahontas, Sacred Heart
Dubuque, Visitation Academy	Rockwell, Sacred Heart
Dyersville, Xavier	Victor, St. John
Fort Dodge, Sacred Heart	Waterloo, Sacred Heart
Fort Madison, Catholic Central H. S.	Waterloo, St. Mary
	West Point, St. James
	West Point, St. Mary

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